

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

- 1 - 52 (canceled)
- 53 (new)      A method of making a trisomic avian comprising:  
  
isolating a mitotic chromosome;  
  
injecting the chromosome into an early stage embryo; and  
  
maintaining the embryo under conditions suitable for the embryo to develop and hatch as a chick.
- 54 (new)      The method of claim 53 comprising transferring the injected embryo to a recipient female avian.
- 55 (new)      The method of claim 53 wherein the early stage embryo is a stage I embryo.
- 56 (new)      The method of claim 53 wherein the transgenic avian is a transgenic chicken.
- 57 (new)      The method of claim 53 wherein the chromosome is an artificial chromosome.
- 58 (new)      The method of claim 53 wherein the chromosome comprises a heterologous recombination site.
- 59 (new)      The method of claim 58 wherein a serine recombinase mediates recombination at the heterologous recombination site.
- 60 (new)      The method of claim 58 wherein the heterologous recombination site is attP or attB.
- 61 (new)      The method of claim 53 wherein the chromosome comprises a heterologous coding sequence.
- 62 (new)      The method of claim 61 wherein the heterologous coding sequence comprises a pharmaceutical protein coding sequence.
- 63 (new)      The method of claim 61 wherein the heterologous coding sequence encodes an immunoglobulin polypeptide.
- 64 (new)      The method of claim 61 wherein the heterologous coding sequence encodes a cytokine.

- 65 (new)      The method of claim 53 wherein the chromosome comprises a promoter.
- 66 (new)      The method of claim 53 wherein the chromosome comprises an oviduct promoter.
- 67 (new)      The method of claim 53 wherein the chromosome comprises an ovomucoid promoter.
- 68 (new)      The method of claim 53 wherein the chromosome comprises an IRES.
- 69 (new)      A method of making a trisomic avian comprising:  
  
                 isolating a mitotic chromosome which comprises a heterologous recombination site;  
  
                 injecting the chromosome into an early stage embryo; and  
  
                 maintaining the embryo under conditions suitable for the embryo to develop and hatch as a chick.
- 70 (new)      The method of claim 69 comprising transferring the injected embryo to a recipient female avian.
- 71 (new)      The method of claim 69 wherein the early stage embryo is a stage I embryo.
- 72 (new)      The method of claim 69 wherein the transgenic avian is a transgenic chicken.
- 73 (new)      The method of claim 69 wherein the chromosome is an artificial chromosome.
- 74 (new)      The method of claim 69 wherein a serine recombinase mediates recombination at the heterologous recombination site.
- 75 (new)      The method of claim 69 wherein the heterologous recombination site is attP or attB.
- 76 (new)      The method of claim 69 wherein the chromosome comprises a heterologous coding sequence.
- 77 (new)      The method of claim 76 wherein the heterologous coding sequence comprises a pharmaceutical protein coding sequence.
- 78 (new)      The method of claim 69 wherein the chromosome comprises a promoter.
- 79 (new)      The method of claim 69 wherein the chromosome comprises an ovomucoid

promoter.

- 80 (new)      The method of claim 69 wherein the chromosome comprises an IRES.
- 81 (new)      A method of making a protein comprising:
- isolating a mitotic chromosome which contains a heterologous nucleotide sequence comprising a promoter operably linked to a coding sequence;
- injecting the chromosome into an early stage embryo;
- maintaining the embryo under conditions suitable for the embryo to develop and hatch as a chick;
- maintaining the chick under conditions suitable for the chick to develop into a mature avian;
- obtaining transgenic offspring from the mature avian; and
- recovering a heterologous protein from the transgenic offspring.
- 82 (new)      The method of claim 81 comprising transferring the injected embryo to a recipient female avian.
- 83 (new)      The method of claim 81 wherein the early stage embryo is a stage I embryo.
- 84 (new)      The method of claim 81 wherein the avian is a chicken.
- 85 (new)      The method of claim 81 wherein the chromosome is an artificial chromosome.
- 86 (new)      The method of claim 81 wherein the chromosome comprises a heterologous recombination site.
- 87 (new)      The method of claim 86 wherein the protein is a pharmaceutical protein.
- 88 (new)      The method of claim 81 wherein the chromosome comprises an oviduct promoter.
- 89 (new)      The method of claim 81 wherein the chromosome comprises an ovomucoid promoter.
- 90 (new)      The method of claim 81 wherein the heterologous protein is present in an egg.
- 91 (new)      The method of claim 81 wherein the heterologous protein is present in egg white.

- 92 (new) A trisomic avian comprising a cell which contains an artificial chromosome.
- 93 (new) The trisomic avian of claim 92 wherein the avian is a chicken.
- 94 (new) The trisomic avian of claim 92 wherein the artificial chromosome comprises a heterologous recombination site.
- 95 (new) The trisomic avian of claim 94 wherein a serine recombinase mediates recombination at the heterologous recombination site.
- 96 (new) The trisomic avian of claim 94 wherein the heterologous recombination site is an attP site or an attB site.
- 97 (new) The trisomic avian of claim 92 wherein the artificial chromosome comprises a heterologous coding sequence.
- 98 (new) The trisomic avian of claim 97 wherein the heterologous coding sequence comprises a pharmaceutical protein coding sequence.
- 99 (new) The trisomic avian of claim 92 wherein the artificial chromosome comprises a promoter.
- 100 (new) The trisomic avian of claim 92 wherein the artificial chromosome comprises an ovomucoid promoter.
- 101 (new) The trisomic avian of claim 92 wherein the artificial chromosome comprises an IRES.